Author Index Volume 23 (1994)

Amendola, M. and J.-L. Gaffard, Markets and organizations as coherent systems of innovation 627
Arora, A. and A. Gambardella, The changing technology of technological change: general and abstract knowledge and the division of innovative labour 523
Birnbaum-More, P.H., A.R. Weiss and R.W. Wright, How do rivals compete: strategy, technology and tactics 249
Brooks, H., The relationship between science and technology 477
Bughin, J. and J.M. Jacques, Managerial efficiency and the Schumpeterian link between size, market structure and innovation revisited 653
Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
Cottrell, T., Fragmented standards and the development of Japan's microcomputer software industry 143
Cozzens, S., *see* Leydesdorff, L. 217
Cusumano, M.A. and D. Elenkov, Linking international technology transfer with strategy and management: a literature commentary 195
Daghfous, A. and G.R. White, Information and innovation: a comprehensive representation 267
Dasgupta, P. and P.A. David, Toward a new economics of science 487
David, P.A., *see* Dasgupta, P. 487
Debackere, K. and M.A. Rappa, Institutional variations in problem choice and persistence among scientists in an emerging field 425
Dunning, J.H., Multinational enterprises and the globalization of innovatory capacity 67
Elenkov, D., *see* Cusumano, M.A. 195
Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Engerman, S.L., The big picture: how (and when and why) the West grew rich 547
Faulkner, W. and J. Senker, Making sense of diversity: public–private sector research linkage in three technologies 673
Fleck, J., Learning by trying: the implementation of configurational technology 637
Florida, R., *see* Kenney, M. 305
Frame, J.D., *see* Tong, X. 133
Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281
Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601
Gaffard, J.-L., *see* Amendola, M. 627
Gambardella, A., *see* Arora, A. 523
Garrette, B. and B. Quelin, An empirical study of hybrid forms of governance structure: the case of the telecommunication equipment industry 395
Garud, R., Cooperative and competitive behaviors during the process of creative destruction 385

Research Policy 23 (1994) 727–729
North-Holland

0048-7333/94/$07.00 © 1994 – Elsevier Science B.V. All rights reserved

Grupp, H., The measurement of technical performance of innovations by technometrics and its impact on established technology indicators 175
Grupp, H., *see* Frenkel, A. 281
Grupp, H., *see* Noyons, E.C.M. 443
Harianto, F. and J.M. Pennings, Technological convergence and scope of organizational innovation 293
Häusler, J., H.-W. Hohn and S. Lütz, Contingencies of innovative networks: A case study of successful interfirm R & D collaboration 47
Hicks, D., T. Ishizuka, P. Keen and S. Sweet, Japanese corporations, scientific research and globalization 375
Hohn, H.-W., *see* Häusler, J. 47
Ishizuka, T., *see* Hicks, D. 375
Jacobsson, S., *see* Carlsson, B. 235
Jacques, J.M., *see* Bughin, J. 653
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357
Kash, D.E., *see* Rycroft, R.W. 613
Keen, P., *see* Hicks, D. 375
Kenney, M. and R. Florida, The organization and geography of Japanese R&D: results from a survey of Japanese electronics and biotechnology firms 305
Khazam, J. and D. Mowery, The commercialization of RISC: Strategies for the creation of dominant designs 89
Kingston, W., Compulsory licensing with capital payments as an alternative to grants of monopoly in intellectual property 661
Kontorovich, V., The future of the Soviet science 113
Koschatzky, K., *see* Frenkel, A. 281
Landau, R., Economic growth and the chemical industry 583
Leydesdorff, L., S. Cozzens and P. Van den Besselaar, Tracking areas of strategic importance using scientometric journal mappings 217
Lütz, S., *see* Häusler, J. 47
Macdonald, S. and C. Williams, The survival of the gatekeeper 123
Maital, S., *see* Frenkel, A. 281
McQueen, D.H., Distribution of growth rates in highly successful Swedish technical innovations 713
Miller, R., Global R&D networks and large-scale innovations: The case of the automobile industry 27
Mokyr, J., Cardwell's Law and the political economy of technological progress 561
Mowery, D., *see* Khazam, J. 89
Nelson, R.R., *see* Rosenberg, N. 323
Noyons, E.C.M., A.F.J. van Raan, H. Grupp and U. Schmoch, Exploring the science and technology interface: inventor–author relations in laser medicine research 443
Patel, P. and K. Pavitt, The continuing, widespread (and neglected) importance of improvements in mechanical technologies 533
Pavitt, K., *see* Patel, P. 533
Pennings, J.M., *see* Harianto, F. 293
Quelin, B., *see* Garrette, B. 395
Quéré, M., Basic research inside the firm: lessons from an in-depth case study 413
Rappa, M.A., *see* Debackere, K. 425
Reiss, T., *see* Frenkel, A. 281

Riggs, W. and E. von Hippel, Incentives to innovate and the sources of innovation: the case of scientific instruments 459
Rosenberg, N. and R.R. Nelson, American universities and technical advance in industry 323
Rycroft, R.W. and D.E. Kash, Complex technology and community: implications for policy and social science 613
Samarajiva, R., *see* Whiston, T.G. 231
Schmoch, U., *see* Noyons, E.C.M. 443
Senker, J., *see* Faulkner, W. 673
Swann, P., *see* Whiston, T.G. 231
Sweet, S., *see* Hicks, D. 375
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Van den Besselaar, P., *see* Leydesdorff, L. 217
van Raan, A.F.J., *see* Engelsman, E.C. 1
van Raan, A.F.J., *see* Noyons, E.C.M. 443
Vincenti, W.G., Variation–selection in the innovation of the retractable airplane landing gear: the Northrop 'anomaly' 575
von Hippel, E., *see* Riggs, W. 459
Wang, J.-C., Cooperative research in a newly industrialized country: Taiwan 697
Weiss, A.R., *see* Birnbaum-More, P.H. 249
Whiston, T.G., R. Samarajiva and P. Swann, Book reviews 231
White, G.R., *see* Daghfous, A. 267
Williams, C., *see* Macdonald, S. 123
Wright, R.W., *see* Birnbaum-More, P.H. 249

Subject Index Volume 23 (1994)

Business

Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Miller, R., Global R&D networks and large-scale innovations: The case of the automobile industry 27
Häusler, J., H.-W. Hohn and S. Lütz, Contingencies of innovative networks: A case study of successful interfirm R & D collaboration 47
Dunning, J.H., Multinational enterprises and the globalization of innovatory capacity 67
Khazam, J. and D. Mowery, The commercialization of RISC: Strategies for the creation of dominant designs 89
Macdonald, S. and C. Williams, The survival of the gatekeeper 123
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Cottrell, T., Fragmented standards and the development of Japan's microcomputer software industry 143
Grupp, H., The measurement of technical performance of innovations by technometrics and its impact on established technology indicators 175
Cusumano, M.A. and D. Elenkov, Linking international technology transfer with strategy and management: a literature commentary 195
Leydesdorff, L., S. Cozzens and P. Van den Besselaar, Tracking areas of strategic importance using scientometric journal mappings 217
Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
Birnbaum-More, P.H., A.R. Weiss and R.W. Wright, How do rivals compete: strategy, technology and tactics 249
Daghfous, A. and G.R. White, Information and innovation: a comprehensive representation 267
Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281
Harianto, F. and J.M. Pennings, Technological convergence and scope of organizational innovation 293
Kenney, M. and R. Florida, The organization and geography of Japanese R&D: results from a survey of Japanese electronics and biotechnology firms 305
Rosenberg, N. and R.R. Nelson, American universities and technical advance in industry 323
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357
Hicks, D., T. Ishizuka, P. Keen and S. Sweet, Japanese corporations, scientific research and globalization 375
Garud, R., Cooperative and competitive behaviors during the process of creative destruction 385

Research Policy 23 (1994) 730–735
North-Holland

0048-7333/94/$07.00 © 1994 – Elsevier Science B.V. All rights reserved

Garrette, B. and B. Quelin, An empirical study of hybrid forms of governance structure: the case of the telecommunication equipment industry 395
Quéré, M., Basic research inside the firm: lessons from an in-depth case study 413
Debackere, K. and M.A. Rappa, Institutional variations in problem choice and persistence among scientists in an emerging field 425
Noyons, E.C.M., A.F.J. van Raan, H. Grupp and U. Schmoch, Exploring the science and technology interface: inventor–author relations in laser medicine research 443
Riggs, W. and E. von Hippel, Incentives to innovate and the sources of innovation: the case of scientific instruments 459
Brooks, H., The relationship between science and technology 477
Dasgupta, P. and P.A. David, Toward a new economics of science 487
Arora, A. and A. Gambardella, The changing technology of technological change: general and abstract knowledge and the division of innovative labour 523
Patel, P. and K. Pavitt, The continuing, widespread (and neglected) importance of improvements in mechanical technologies 533
Engerman, S.L., The big picture: how (and when and why) the West grew rich 547
Mokyr, J., Cardwell's Law and the political economy of technological progress 561
Vincenti, W.G., Variation–selection in the innovation of the retractable airplane landing gear: the Northrop 'anomaly' 575
Landau, R., Economic growth and the chemical industry 583
Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601
Rycroft, R.W. and D.E. Kash, Complex technology and community: implications for policy and social science 613
Amendola, M. and J.-L. Gaffard, Markets and organizations as coherent systems of innovation 627
Fleck, J., Learning by trying: the implementation of configurational technology 637
Bughin, J. and J.M. Jacques, Managerial efficiency and the Schumpeterian link between size, market structure and innovation revisited 653
Kingston, W., Compulsory licensing with capital payments as an alternative to grants of monopoly in intellectual property 661
Faulkner, W. and J. Senker, Making sense of diversity: public–private sector research linkage in three technologies 673
Wang, J.-C., Cooperative research in a newly industrialized country: Taiwan 697
McQueen, D.H., Distribution of growth rates in highly successful Swedish technical innovations 713

Government

Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Kontorovich, V., The future of the Soviet science 113
Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281
Rosenberg, N. and R.R. Nelson, American universities and technical advance in industry 323
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357
Engerman, S.L., The big picture: how (and when and why) the West grew rich 547
Mokyr, J., Cardwell's Law and the political economy of technological progress 561

Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601
Rycroft, R.W. and D.E. Kash, Complex technology and community: implications for policy and social science 613
Amendola, M. and J.-L. Gaffard, Markets and organizations as coherent systems of innovation 627
Kingston, W., Compulsory licensing with capital payments as an alternative to grants of monopoly in intellectual property 661

Universities and basic research

Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Kontorovich, V., The future of the Soviet science 113
Leydesdorff, L., S. Cozzens and P. Van den Besselaar, Tracking areas of strategic importance using scientometric journal mappings 217
Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281
Rosenberg, N. and R.R. Nelson, American universities and technical advance in industry 323
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357
Hicks, D., T. Ishizuka, P. Keen and S. Sweet, Japanese corporations, scientific research and globalization 375
Quéré, M., Basic research inside the firm: lessons from an in-depth case study 413
Debackere, K. and M.A. Rappa, Institutional variations in problem choice and persistence among scientists in an emerging field 425
Noyons, E.C.M., A.F.J. van Raan, H. Grupp and U. Schmoch, Exploring the science and technology interface: inventor–author relations in laser medicine research 443
Riggs, W. and E. von Hippel, Incentives to innovate and the sources of innovation: the case of scientific instruments 459
Brooks, H., The relationship between science and technology 477
Dasgupta, P. and P.A. David, Toward a new economics of science 487
Arora, A. and A. Gambardella, The changing technology of technological change: general and abstract knowledge and the division of innovative labour 523
Vincenti, W.G., Variation–selection in the innovation of the retractable airplane landing gear: the Northrop 'anomaly' 575
Landau, R., Economic growth and the chemical industry 583
Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601
Faulkner, W. and J. Senker, Making sense of diversity: public–private sector research linkage in three technologies 673
Wang, J.-C., Cooperative research in a newly industrialized country: Taiwan 697

Management and planning

Miller, R., Global R&D networks and large-scale innovations: The case of the automobile industry 27
Häusler, J., H.-W. Hohn and S. Lütz, Contingencies of innovative networks: A case study of successful interfirm R & D collaboration 47

Dunning, J.H., Multinational enterprises and the globalization of innovatory capacity 67
Khazam, J. and D. Mowery, The commercialization of RISC: Strategies for the creation of dominant designs 89
Macdonald, S. and C. Williams, The survival of the gatekeeper 123
Cusumano, M.A. and D. Elenkov, Linking international technology transfer with strategy and management: a literature commentary 195
Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
Birnbaum-More, P.H., A.R. Weiss and R.W. Wright, How do rivals compete: strategy, technology and tactics 249
Daghfous, A. and G.R. White, Information and innovation: a comprehensive representation 267
Harianto, F. and J.M. Pennings, Technological convergence and scope of organizational innovation 293
Kenney, M. and R. Florida, The organization and geography of Japanese R&D: results from a survey of Japanese electronics and biotechnology firms 305
Hicks, D., T. Ishizuka, P. Keen and S. Sweet, Japanese corporations, scientific research and globalization 375
Garud, R., Cooperative and competitive behaviors during the process of creative destruction 385
Garrette, B. and B. Quelin, An empirical study of hybrid forms of governance structure: the case of the telecommunication equipment industry 395
Quéré, M., Basic research inside the firm: lessons from an in-depth case study 413
Arora, A. and A. Gambardella, The changing technology of technological change: general and abstract knowledge and the division of innovative labour 523
Patel, P. and K. Pavitt, The continuing, widespread (and neglected) importance of improvements in mechanical technologies 533
Landau, R., Economic growth and the chemical industry 583
Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601
Rycroft, R.W. and D.E. Kash, Complex technology and community: implications for policy and social science 613
Amendola, M. and J.-L. Gaffard, Markets and organizations as coherent systems of innovation 627
Bughin, J. and J.M. Jacques, Managerial efficiency and the Schumpeterian link between size, market structure and innovation revisited 653
Faulkner, W. and J. Senker, Making sense of diversity: public–private sector research linkage in three technologies 673
Wang, J.-C., Cooperative research in a newly industrialized country: Taiwan 697

Measurement and evaluation

Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Grupp, H., The measurement of technical performance of innovations by technometrics and its impact on established technology indicators 175
Leydesdorff, L., S. Cozzens and P. Van den Besselaar, Tracking areas of strategic importance using scientometric journal mappings 217
Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281

Debackere, K. and M.A. Rappa, Institutional variations in problem choice and persistence among scientists in an emerging field 425
Noyons, E.C.M., A.F.J. van Raan, H. Grupp and U. Schmoch, Exploring the science and technology interface: inventor–author relations in laser medicine research 443
Riggs, W. and E. von Hippel, Incentives to innovate and the sources of innovation: the case of scientific instruments 459
Patel, P. and K. Pavitt, The continuing, widespread (and neglected) importance of improvements in mechanical technologies 533
McQueen, D.H., Distribution of growth rates in highly successful Swedish technical innovations 713

Countries

Belgium

Bughin, J. and J.M. Jacques, Managerial efficiency and the Schumpeterian link between size, market structure and innovation revisited 653

Brazil

Frischtak, C.R., Learning and technical progress in the commuter aircraft industry: an analysis of Embraer's experience 601

France

Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Quéré, M., Basic research inside the firm: lessons from an in-depth case study 413

Germany

Häusler, J., H.-W. Hohn and S. Lütz, Contingencies of innovative networks: A case study of successful interfirm R & D collaboration 47
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357

International comparisons

Grupp, H., The measurement of technical performance of innovations by technometrics and its impact on established technology indicators 175
Debackere, K. and M.A. Rappa, Institutional variations in problem choice and persistence among scientists in an emerging field 425

Israel

Frenkel, A., T. Reiss, S. Maital, K. Koschatzky and H. Grupp, Technometric evaluation and technology policy: the case of biodiagnostic kits in Israel 281

Japan

Engelsman, E.C. and A.F.J. van Raan, A patent-based cartography of technology 1
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Cottrell, T., Fragmented standards and the development of Japan's microcomputer software industry 143
Kenney, M. and R. Florida, The organization and geography of Japanese R&D: results from a survey of Japanese electronics and biotechnology firms 305
Hicks, D., T. Ishizuka, P. Keen and S. Sweet, Japanese corporations, scientific research and globalization 375

Russia

Kontorovich, V., The future of the Soviet science 113

Sweden

Carlsson, B. and S. Jacobsson, Technological systems and economic policy: the diffusion of factory automation in Sweden 235
McQueen, D.H., Distribution of growth rates in highly successful Swedish technical innovations 713

Taiwan

Wang, J.-C., Cooperative research in a newly industrialized country: Taiwan 697

UK

Macdonald, S. and C. Williams, The survival of the gatekeeper 123
Jansen, D., National research systems and change: the reaction of the British and German research systems to the discovery of High–T_c Superconductors 357
Faulkner, W. and J. Senker, Making sense of diversity: public–private sector research linkage in three technologies 673

USA

Khazam, J. and D. Mowery, The commercialization of RISC: Strategies for the creation of dominant designs 89
Tong, X. and J.D. Frame, Measuring national technological performance with patent claims data 133
Birnbaum-More, P.H., A.R. Weiss and R.W. Wright, How do rivals compete: strategy, technology and tactics 249
Daghfous, A. and G.R. White, Information and innovation: a comprehensive representation 267
Harianto, F. and J.M. Pennings, Technological convergence and scope of organizational innovation 293
Rosenberg, N. and R.R. Nelson, American universities and technical advance in industry 323
Vincenti, W.G., Variation–selection in the innovation of the retractable airplane landing gear: the Northrop 'anomaly' 575
Landau, R., Economic growth and the chemical industry 583
Rycroft, R.W. and D.E. Kash, Complex technology and community: implications for policy and social science 613

Contents continued

Distribution of growth rates in highly successful Swedish technical innovations
D.H. McQueen 713

Author index 727
Subject index 730